

REMARKS

The claims have been amended to more clearly define the invention as disclosed in the written description. In particular, claims 1, 4 and 6 have been amended for clarity.

The Examiner has rejected claims 1-4 and 6 under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 6,278,792 to Cox et al.

The Cox et al. patent discloses a robust digital watermarking in which a watermark to be embedded in a picture is a vector $W[k]$, $k=1..N$. The watermark is embedded in the DCT domain. To this end, an equally long vector $V[k]$ is extracted from the picture. More particularly, the DCT coefficients of the picture are classified into N sets. A weighted sum of the coefficients of set 1 constitutes $V[1]$, a weighted sum of the coefficients of set 2 constitutes $V[2]$, etc. The picture is modified such that its vector $V[k]$, $k=1..N$, has a high correlation with $W[k]$.

The watermark detection is shown in Fig. 8 and described in Cox et al. at col. 12, line 12, to col. 13, line 8. The detector receives an MPEG stream. The stream is Huffman decoded (80) so that the DCT coefficients are available. The coefficients are classified as described above and summed in an accumulator (82) to obtain a vector having length N . This vector is then correlated (84) with the watermark $W[k]$ to be detected.

In the current Office Action, the Examiner, in rejecting the claims, states:

"Regarding claim 1, Cox et al discloses a method of detecting a watermark in a compressed video signal (Fig. 10) comprising spectral coefficients obtained by transforming picture of said video signal, the method comprising the steps:

accumulating spatially corresponding coefficients of a plurality of picture (step 102 of Fig. 10, col. 17, lines 51-58);

inverse transforming said accumulated coefficients into an accumulated plurality of pictures (step 104 of Fig. 10, col. 17, line 59 to col. 18, line 1); and

detecting the watermark in said accumulated plurality of pictures (steps 106-118 of Fig. 10, col. 18, lines 1-12)."

It is well founded that "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Further, "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim, but this is not an ipsissimis verbis test, i.e., identity of terminology is not required. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

Applicants submit that the Examiner has mischaracterized the reference in an attempt to show the elements of the subject invention. In particular, while Cox et al. shows the specific elements of the subject invention, Cox et al. does not show or

suggest that these elements should be used for detecting a watermark in a compressed video signal as specifically claimed in, for example, claim 1.

In particular, the Examiner cites the steps "accumulating spatially corresponding coefficients..." and "accumulating spatially corresponding coefficients..." which appear, to some extent, in claim 1, and states that these elements "disclose a method of detecting a watermark in a compressed video signal (Fig. 10)..."

Applicants submit that the Examiner is mistaken. In particular, Fig. 10 not only relates to detection of a watermark, but also to compensating for translational registration. In particular, Cox et al. specifically states that the steps accumulating in 8X8 accumulators 102, inverse conversion 104, and accumulating in accumulators 106, provide input for registration 108 (col. 17, line 51 to col. 18, line 5). This registration process is described at col. 15, line 36 et seq., which states "The second way, which compensates for translations of non-even multiples of n pixels, uses a pattern (referred to as a "registration pattern") which can be inserted at the time of watermark insertion. By finding the location where the registration signal best matches a predefined signal, a detector can determine how much to shift the data before extracting the watermark." (emphasis added).

At col. 18, lines 5-16, Cox et al. specifically states:

"The registration data outputted from registration process 108 is accumulated in accumulators 110 and converted into the DCT domain in DCT converter 112 for watermark extraction by use of accumulators 114, watermark extractor 116 and watermark decoder 118. In watermark extractor 116, the DCT coefficients outputted from accumulator 114 are classified into N sets according to the functions $h_m(i,j)$ and summed for extracting a watermark. The obtained watermark is provided to watermark decoder 118, in which the processes executed in comparator 84 in FIG. 8 for finding a watermark corresponding to the extracted watermark. The watermark considered to have been inserted is outputted from the watermark decoder 118."

Applicants submit that it should be patently clear from the above that Cox et al. discloses that watermark detection is performed by the accumulators 114, watermark extractor 116 and watermark decoder 118, after the signal from the accumulators 110 have been converted into the DCT domain in DCT converter 112, and that this watermark detection process is per Fig. 8 which specifically shows detecting the watermark in the DCT domain.


However, the subject invention, as claimed in claim 1, specifically states "accumulating spatially corresponding coefficients of a plurality of pictures" (in the DCT domain), "inverse transforming said accumulated coefficients into an accumulated plurality of pictures" (the spatial domain), and "detecting the watermark in said accumulated plurality of pictures" (the spatial domain).

Applicants submit that while Cox et al. discloses "accumulating" and "inverse transforming", these steps are done for identifying registration shifts, and not for watermark detection.

In view of the above, Applicants believe that the subject invention, as claimed, is neither anticipated nor rendered obvious by the prior art, and as such, is patentable thereover.

Applicants believes that this application, containing claims 1-4 and 6, is now in condition for allowance and such action is respectfully requested.

Respectfully submitted,

by 
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